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"KNOWLEDGE REGARDING FOOD SAFETY AMONG SCHOOL-GOING CHILDREN AT SELECTED SCHOOLS OF KURALI (PUNJAB)"

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ABSTRACT

Food safety is scientific discipline which describes handling, preparation and storage of food in a way that prevent food borne illness. Contaminated food can transmit the diseases from person to person as well serve as the growth medium for micro-organisms that can cause food poisoning. The study's objective was to evaluate how well school-age children understood food safety after receiving a health education package. The study method employed was quasi-experimental. The current investigation employed a non-equivalent pre-test post-comparison group design. Total 300 participants were selected using simple random sampling 150 for experimental group and 150 for control group. Structure knowledge questionnaire was used to assess the effectiveness of health education package on knowledge regarding food safety. The study found that the experimental group had a mean± SD knowledge score of 8.94±3.71 and 18.37±4.62 for pre-test and post-test food safety, while the control group had a mean± SD of 9.10± 3.80 and 9.65± 4.17. Using a t-test, the experimental group showed significant differences in food safety knowledge scores ($p<0.05$) compared to the control group ($p>0.05$). Comparing the experimental group to the control group, the study found that the former had higher food safety knowledge scores.

Keywords: - Food safety, food safety knowledge, school children.

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INTRODUCTION

The scientific field of food safety describes how to handle, prepare, and store food in a way that minimizes the risk of contracting a food-borne illness. This covers several practices that ought to be adhered to in order to prevent potentially serious health risks. In this sense, there is frequently overlap between food safety and food defense to shield consumers from harm. Food that has been contaminated can spread illnesses from person to person and act as a breeding ground for microorganisms that can produce food poisoning.

Children are the most vulnerable population group to foodborne diseases due to their increased susceptibility to illness when exposed to foodborne agents. The primary cause of this issue is from inadequate safety measures in school canteens. Hence, it is imperative to have an accurate and dependable tool that can evaluate the level of food safety among food handlers in the school canteen, specifically in terms of their understanding and implementation of personal hygiene, food hygiene, food storage, and environmental cleanliness.

Young children have a lower body weight, a less developed immune system, and less control over the preparation of their meals, which puts them at a greater risk of contracting a foodborne disease than adults have during the same age. Especially in young children, those who contract foodborne illnesses are at a greater risk of experiencing long-term health repercussions and even death. Approximately one half of reported foodborne illness occurs in children. Children are disproportionately affected by these foodborne microorganisms; Campylobacter, Escherichia coli, Salmonella, and Shigella.

The study's objectives

1. To evaluate school-age children's pre- and post-test knowledge of food safety.
2. To create and implement a health teaching package for children in school that focuses on food safety.
3. To evaluate the impact of a health education program on food safety for students enrolled in school.

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4. To ascertain the association between pre-test food safety knowledge and selected demographic characteristics.

HYPOTHESIS

- With regard to food safety, the post-test knowledge score of school-aged children will be considerably greater than their pretest knowledge score.
- Pre-test knowledge scores will be significantly associated with certain demographic characteristics.

MATERIAL AND METHODS

For this study, a quantitative research approach was utilised, and a quasi-experimental design, also known as a non-equivalent pre-test post-comparative group plan, was utilised. The children who were attending school were the target audience, and the group that was accessible was comprised of children who were attending school (10–15 years old) from a selection of schools in Kurali (Punjab). Both the experimental group and the control group consisted of 150 school-going children from chosen schools in Kurali. The experimental group consisted of 150 children, while the control group consisted of exactly the same number of school-going children. In order to choose the samples, a straightforward random sampling method was utilised.

TOOL: The tool consisted of two sections:

Section A: ***Socio-Demographic Variables*** **-** Socio-demographic data includes age, gender, class, religion, type of family, number of children in family, residence, dietary pattern and food habits data includes source of drinking water, did you filter the water before drinking, source of information, type of home, did you wash the vegetables and utensils before cooking, education of mother, education of father, occupation of father, occupation of mother, family income per month and source of information.

Section B: ***Structured Knowledge Questionnaire*** **-** A structural knowledge questionnaire was included. This instrument comprised of 30 questions designed to measure school-age children's understanding of food safety. Each item has one correct answer out of four

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alternatives, and each correct response is worth one mark. The following aspects were addressed in the questions:

- ✓ Hygiene.
- ✓ Food hygiene.
- ✓ Food safety and its principles.
- ✓ Importance of food safety and basics for handling food safely.
- ✓ Foodborne diseases.
- ✓ Causes and clinical manifestation of food borne disease.
- ✓ Treatment of foodborne diseases.
- ✓ Preventions of food borne disease.

RESULTS AND INTERVENTION

The acquired data were initially coded and summarised in a master data sheet before being analysed using SPSS, version 21, in accordance with the study's objectives.

TABLE 1 Frequency and Percentage Distribution of Subjects as Per Their Demographic Variables (Child Profile)

N=300

Demographic variables		Experimental group N=150		Control group N=150	
		N	%	N	%
Age in years	10	17	11.3	37	24.7
	11	21	14.0	32	21.3
	12	31	20.7	30	20.0
	13	27	18.0	21	14.0
	14	29	19.3	16	10.7
	15	25	16.7	14	9.3
Gender	Male	76	50.7	80	53.3
	Female	74	49.3	70	46.6
Class	5^{th}	27	18.0	66	44.0
	6^{th}	24	16.0	18	12.0
	7^{th}	42	28.0	34	22.7
	8^{th}	24	16.0	20	13.3
	9^{th}	33	22.0	12	8.0

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Religion	Hindu Muslim Sikh Christian	73 04 71 02	48.7 2.7 47.3 1.3	80 05 61 04	53.3 3.3 40.7 2.7
Type of Family	Nuclear Joint Extended	05 93 03	36.0 62.0 2.0	64 81 05	42.7 54.0 3.3
Number of children in family	One Two Three More than three	20 46 54 30	13.3 30.7 36.0 20.0	25 38 47 40	16.7 25.3 31.3 26.7
Residence	Rural Urban	64 86	42.7 57.3	67 83	44.7 53.3

TABLE-1 (b) - Frequency and Percentage Distribution of Subjects as Per Their Food Habits

N=300

Demographic variables		**Experimental group N=150**		**Control group N=150**	
		N	**%**	**N**	**%**
Dietary pattern	Vegetarian Non- vegetarian	115 035	076.7 023.3	108 042	072.0 028.0
Source of drinking water	Open well Bore well Hand pump Tap water	005 023 013 109	003.3 015.3 008.7 072.7	007 018 019 106	004.7 012.0 012.7 070.7
Did You Filter the Water before drinking	Yes No	099 051	066.0 034.0	102 048	068.0 032.0
Source of Information	Mass media Peer group Printed-media	087 031 032	058.0 020.7 021.3	085 035 030	056.7 023.3 020.0

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Type of Home	Kachaa Pakka	014 136	009.3 090.7	000 150	000.0 100.0
Did you wash the vegetables and utensils before cooking	Yes No	150 000	100.0% 000.0%	150 000	100.0% 000.0%

TABLE-2 - Comparison of Pre-Test and Post-Test Knowledge Scores Regarding Food Safety of The Subjects

N=300

Group	Test	Mean ±SD	Mean difference	t-test
Experimental	Pre-test Post-test	8.94±3.71 18.37±4.62	9.43	17.14**
Control	Pre-test Post-test	9.10±3.80 9.65±4.17	0.55	00.36

*(p<0.05)

TABLE – 3: Associations Between Demographic Variables and Pre-Test Level Of Knowledge of the Subjects

N=300

Demographic variables		Subjects Knowledge						
		Poor		Average		Good		χ^2
	Category	n	%	N	%	n	%	
Age	5	035	64.8	19	35.2	0	0.0	2.845
	6	038	71.7	15	28.3	0	0.0	
	7	043	70.5	18	29.5	0	0.0	
	8	031	64.6	17	35.4	0	0.0	
	9	035	77.8	10	22.2	0	0.0	
	10	026	66.7	13	33.3	0	0.0	

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Gender	Male Female	101 107	67.3 71.3	49 43	32.7 28.7	0 0	0.0 0.0	.564
Class	5th 6th 7th 8th 9th	062 033 054 029 030	66.7 78.6 71.1 65.9 66.7	31 09 22 15 15	33.3 21.4 28.9 34.1 33.3	0 0 0 0 0	0.0 0.0 0.0 0.0 0.0	2.496
Religion	Hindu Muslim Sikh Christian	110 005 089 004	71.9 55.6 67.4 66.7	43 04 43 02	28.1 44.4 32.6 33.3	0 0 0 0	0.0 0.0 0.0 0.0	1.522
Type of Family	Nuclear Joint Extended	078 126 004	66.1 72.4 50.0	40 48 04	33.9 27.6 50.0	0 0 0	0.0 0.0 0.0	
Number of children in family	One Two Three More than three	033 061 073 041	73.3 72.6 72.3 58.6	12 23 28 29	26.7 27.4 27.7 41.4	0 0 0 0	0.0 0.0 0.0 0.0	4.990
Residence	Rural Urban	084 124	64.1 73.4	47 45	35.9 26.6	0 0	0.0 0.0	2.970
Dietary Pattern	Vegetarian Non vegetarian	160 048	71.7 62.3	63 29	28.3 37.7	0 0	0.0 0.0	2.384
Source of Drinking Water	Open-Well Bore- Well Hand-Pump Tap- Water	007 027 028 146	58.3 65.9 87.5 67.9	05 14 04 69	41.7 34.1 12.5 32.1	0 0 0 0	0.0 0.0 0.0 0.0	6.089
Did You Filter the Water before drinking	Yes No	137 071	68.2 71.7	64 28	31.8 28.3	0 0	0.0 0.0	.136

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Source of Information	Mass media Peer group Printed media	122 044 042	70.9 66.7 67.7	50 22 20	29.1 33.3 32.3	0 0 0	0.0 0.0 0.0	.330
Type of Home	Kuchaa Pukka	011 197	78.6 68.9	03 89	21.4 31.1	0 0	0.0 0.0	14.68**
Did you wash vegetables and utensils before cooking	Yes No	208 000	69.3 00.0	92 00	30.7 00.0	0 0	0.0 0.0	

(P>0.05)

DISCUSSION:

The study's results showed that there was a difference between the experimental group (8.94±3.71) and the control group (9.10±3.80) in the mean score of the pre-test knowledge score about food safety among school-going children. After the pre-test, the experimental group was given a health information package. After getting a health education package, there was a big difference between the experimental group's mean post-test score (18.37±4.62) and the control group's mean score (9.65±4.17) on a test of how much they knew about food safety.The experimental group does better on the post-test than the control group when it comes to how much they know about food safety among school-aged kids. The test showed a difference in mean knowledge scores that was statistically significant ($p<0.05$).

A similar study conducted by Shen Metal (2015) conducted a quasi-experimental study to assess knowledge, attitude and behaviour on nutrition and food safety health education for primary school students in two poverty stricken countries. The study aimed to assess the knowledge, attitude and behaviour with respect to nutrition and food safety. Twelve primary schools are randomly selected and then six geographically dispersed schools were assigned to the intervention group in a non-random way. A questionnaire was introduced to participants. Student's participants in intervention group received targeted

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nutrition and food safety lecture 0.5 hour per week for two semesters. Item response theory was applied for assessment of questionnaire. A study concluded that health education improved 95% in term of knowledge and behavior but had no effects on attitude.

Conclusion

The investigation found a substantial difference between the experimental group's and the control group's knowledge. The experimental group exhibits a significantly higher level of expertise in food safety compared to the control group. There was no notable correlation between the pre-test knowledge score and the demographic characteristics they selected.

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